Remarks/Arguments:

Claims 1-39 are pending and stand rejected.

By this Amendment, claims 1-36 and 38-39 are amended, claim 37 is canceled without prejudice and new claims 40 and 41 are added.

No new matter is being added by the claim amendments and new claim. Support for the claim amendments and new claims can be found throughout the original specification and, for example, in the original specification and paragraphs [0035], [0038] and [0043].

Rejection of Claims 1-5, 13-14, 17-21, 27 and 30-35 under 35 U.S.C. §102(b)

Rejection of claims 1-5, 13-14, 17-21, 27 and 30-35 under 35 U.S.C. §102(b) as being anticipated by Miyake (U.S. Patent Publication No.: 2001/0050721).

Reconsideration is respectfully requested.

Claim 1

Claim 1 is directed to a dual camera module, and recites:

> a flexible interconnect having a common data line that is shared by the first and second image modules, the common data line being configured to electrically connect the first and second outputs to the circuitry on the substrate,
>
> wherein portions of the first and second image data are selectively blocked at each respective image module to synchronize the first and second image data received by the circuitry on the substrate.

That is, the dual camera module includes a flexible interconnect having a shared common data line and portions of the first and second image data are selectively blocked at each respective image module to synchronize the first and second image data received by the circuitry on the substrate.

Miyake Reference

Miyake discloses an imaging device that includes a substrate 1 and a peripheral element 10. The substrate 1 includes a cavity 12 defined within the substrate. Moreover, the peripheral element 10 includes imaging elements 2 on opposite sides of the peripheral element 10. One of the imaging elements in Miyake fits inside the recess defined by cavity 12. Further, in Miyake, each of the imaging elements 2 is connected via respectively different wires 11 to substrate 1. (See Miyake at FIGS. 22A and 22B and paragraphs [0161] - [0162].) Moreover, Miyake discloses at paragraph [0236] that an imaging device may be connected to a main substrate by way of a flexible printed circuit or a connector. Miyake, however, is silent regarding a common data line or anything related to synchronization of first and second image data, as required by claim 1.

Accordingly, it is submitted that claim 1 patentably distinguishes over Miyake for at least the above-mentioned reasons.

Claims 17 and 31

Claims 17 and 31, which include similar but not identical features to those of claim 1, are submitted to patentably distinguish over Miyake for at least the same reasons as those of claim 1.

Claims 2-5, 13-14, 18-21, 27, 30 and 32-35

Claims 2-5, 13-14, 18-21, 27, 30 and 32-35, which include all of the limitations of claim 1, 17 or 31, are submitted to patentably distinguish over Miyake for at least the same reasons as the respective independent claim.

Rejection of Claims 31 and 36 under 35 U.S.C. §102(b)

In the Office Action, at item 3, claims 31 and 36 are rejected under 35 U.S.C. §102(b) as being anticipated by Kuroda (U.S. Patent Publication No.: 2003/0036365).

Reconsideration is respectfully requested.

Claim 31

Claim 31 is directed to an electronic apparatus, and recites that "portions of the first and second images are selectively blocked at each respective image module to synchronize the first and second images displayed on the screen."

Kuroda Reference

Kuroda discloses a folding mobile phone with a close-range-photography camera module 6 and a long-range-photography camera module 10 on opposite sides of the flip portion of the phone. (See Kuroda at paragraphs [0034] - [0035] and FIG. 5.) Kuroda further discloses that the mobile phone includes a display portion 3. Moreover, Kuroda discloses the use of an optical-path-switching optical system 31 that allows the user to switch between a subject on the front side of the upper casing 1a and a second subject on the rear side of the upper casing 1a when photographing. In the Kuroda phone, the optical-path-switching optical system 31 includes a mirror unit 36 sloped at approximately 45° and fixed to the bottom surface of a thin disk shaped knob 37. The mirror unit 36 can be rotated by the user to either face the rear side photography window 41 or the front-side photography window 40 to change the optical path for capturing an image. That is, either an image may be captured by the close-range-photography camera module 6 or the long-range photography camera module 10. Thus, portions of the first and second images are not selectively blocked and the first and second images are not synchronized for display on the display portion 3. This is because, the selection of the front or rear side photography window blocks an entire image such that synchronization can not occur.

Accordingly, it is submitted that claim 31 patentably distinguishes over Kuroda for at least the above-mentioned reasons.

Claim 36

Claim 36 is directed to a method of operating an electronic apparatus having first and second image modules, and recites:

> capturing a scene by the first image module while the second image module is not operating...
>
> turning on the second image module after the capturing of the scene by the first image module; and
>
> capturing after the turning on of the second image module, the scene at a high resolution than the previewed scene using the second image module based on the previewed scene.

Kuroda Reference

Kuroda discloses the use of close and long range photography camera modules 6 and 10. Kuroda, as described above, uses a optical-path-switching optical system 31 to switch between these modules 6 and 10. Kuroda, however, is silent regarding anything related to capturing a scene by the first image module while the second image module is not operating then turning on the second image module and thereafter capturing the scene (the same scene) using the second image module based on the previewed scene. This is because, although Kuroda discloses a power source built into the lower casing 16, it does not disclose any details about turning on or off modules 6 and 10.

Accordingly, it is submitted that claim 36 patentably distinguishes over Kuroda for at least the above-mentioned.

Rejection of Claim 38 under 35 U.S.C. §102(b)

In the Office Action, at item 4, claim 38 is rejected under 35 U.S.C. §102(b) as being anticipated Foote (U.S. Patent Publication No.: 2002/0122113).

Reconsideration is respectfully requested.

Claim 38

Claim 38 is directed to a method of operating an electronic device, the electronic device including first and second image modules having first and second outputs, respectively, and recites:

> synchronizing the first and second data streams received by the circuitry on the substrate by selectively blocking reception of portions of the first and second image data streams transmitted by the first and second outputs, respectively, via the common data

line to the circuitry on the substrate to generate a composite image data stream.

Foote Reference

Foote discloses multiple video cameras 10 that are mounted on a rigid substrate 20 such that each camera's field-of-view overlaps that of its neighbor. The resulting images are aligned using digital warping and objects are matched to form a large composite image. (See Foote at paragraph [0058]). Foote, however, is silent regarding transmitting the first and second image data stream to the circuitry on the substrate via at least one common data line and, furthermore, synchronizing the first and second image data streams received by the circuitry on the substrate by selectively blocking reception of portions of the first and second image data streams transmitted by the first and second outputs, respectively. (See claim 38.) Instead, Foote discloses that video streams from cameras are packaged, compressed and prepared for broadcast at a broadcast station 264, and broadcast via cable, internet, airwaves or other broadcasting media/modes. (See Foote at paragraph [0064].) Further, at the receiving end, a receiving device receives the broadcast signal and a user station 282 combines the images received in the broadcast to a single panoramic view. The single panoramic view may be achieved by image warping. (See Foote at paragraph [0075].) Thus, Foote teaches that image data from different cameras are sent to a user station to be processed into a panoramic view and, more particularly, in the Foote system portions of images from these cameras are not selectively blocked to generate the composite image data stream (panoramic image).

Accordingly, it is submitted that claim 38 patentably distinguishes over Foote for at least the above-mentioned reasons.

Rejection of Claims 6-8, 10-11, 22 and 26 under 35 U.S.C. §103(a)

In the Office Action, at item 6, claims 6-8, 10-11, 22 and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Miyake in view of Johnson et al. (U.S. Patent Publication No.: 2006/0197847, hereafter referred to as Johnson).

Reconsideration is respectfully requested.

Claims 6-8, 10-11, 22 and 26, which include all of the limitations of claim 1 or claim 17, are submitted to patentably distinguish over Miyake for at least the same reasons as those of claim 1 or claim 17.

The addition of Johnson does not overcome the deficiencies of Miyake. This is because, Johnson does not disclose or suggest that "portions of the first and second image data are selectively blocked at each respective image module to synchronize the first and second image data received by the circuitry on the substrate, "as required by claim 1 or that portions of the

first and second captured images are selectively blocked at each respective image module to synchronize the first and second captured images received by the circuitry on the substrate," as required by claim 17 (hereafter referred to as the selectively blocked features). Instead, Johnson discloses the use of either horizontal and vertical synchronization information that is encoded in the data stream or individual synchronization signals, for example, HREFOUT and VREFOUT. (See Johnson at paragraph [0080].) Johnson, however, is silent regarding anything related to selectively blocking images or image data.

Accordingly, it is submitted that claims 6-8, 10-11, 22 and 26, which include all of the limitations of claim 1 or claim 17, patentably distinguish over Miyake in view of Johnson for at least the above-mentioned reasons.

Rejection of Claim 12 under 35 U.S.C. §103(a)

In the Office Action, at item 7, claim 12 is rejected under 35 U.S.C. §103(a) as being unpatentable over Miyake in view of Kayada (U.S. Patent Publication No.: 2004/0119718).

Claim 12, which includes all of the limitations of claim 1, is submitted to patentably distinguish over Miyake for at least the same reasons as those of claim 1.

The addition of Kayada does not overcome the deficiencies of Miyake. This is because, Kayada does not disclose or suggest the selectively blocked feature of claim 1. Kayada discloses the use of a tri-state buffer to connect outputs of camera modules to allow a wired-OR connection. The camera input switching section 170 outputs a signal to turn ON/OFF the output of the tri-state buffer to switch between image data from the two camera modules. Further, Kayada discloses that the image data "can be a still image or a moving image." (See Kayada at paragraph [0053].) Thus, Kayada is silent regarding portions of the first and second image data being selectively blocked at each respective image because the tri-state buffer merely switches between images from the two camera modules. Moreover, Kayada is silent regarding the use of the tri-state buffer for synchronization of portions of image data.

Accordingly, claim 12, which includes all of the limitations of claim 1, is submitted to patentably distinguish over Miyake in view of Kayada for the above-mentioned reasons.

Rejection of Claims 9 and 23-24 under 35 U.S.C. §103(a)

In the Office Action, at item 8, claims 9 and 23-24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Miyake in view of Stam et al. (U.S. Patent Publication No.: 2004/0230358, hereafter referred to as Stam).

Claims 9 and 23-24, which include all of the limitations of claim 1 or claim 17, are submitted to patentably distinguish over Miyake for at least the same reasons as claim 1 or claim 17.

The addition of Stam does not overcome the deficiencies of Miyake. This is because, Stam, which is used by the Examiner to teach communication protocol over various bus structures, does not disclose or suggest that portions of first and second image data/images are selectively blocked at each respective image module to synchronize the first and second image data/image received by the circuitry on the substrate. That is, Stam is silent regarding synchronization of first and second image data/images using selective blocking.

Accordingly, it is submitted that claims 9 and 23-24, which include all of the limitations of claim 1 or claim 17, patentably distinguish over Miyake in view of Stam for at least the above-mentioned reasons.

Rejection of Claim 25 under 35 U.S.C. §103(a)

In the Office Action, at item 9, claim 25 is rejected under 35 U.S.C. §103(a) as being unpatentable over Miyake in view of Stam and further in view of Tanha (U.S. Patent Publication No.: 2002/0108011).

Reconsideration is respectfully requested.

Claim 25, which includes all of the limitations of claim 17, is submitted to patentably distinguish over Miyake in view of Tanha for at least the same reasons as those of claim 17.

The addition of Tanha does not overcome the deficiencies of Miyake and Stam. This is because, Tanha is silent regarding anything related to blocking of first and second captured images. Instead, Tanha is concerned with an electronic device that includes a dual interface serial bus that can support either the I2C or SPI serial interfaces. (See Tanha at [0009].)

Accordingly, it is submitted that claim 25, which includes all of the limitations of claim 17, is submitted to patentably distinguish over Miyake and Stam in view of Tanha for at least the above-mentioned reasons.

Rejection of Claim 15 under 35 U.S.C. §103(a)

In the Office Action, at item 10, claim 15 is rejected under 35 U.S.C. §103(a) as being unpatentable over Miyake in view of Monroe (U.S. Patent No.: 7,057,647).

Reconsideration is respectfully requested.

Claim 15, which includes all of the limitations of claim 1, is submitted to patentably distinguish over Miyake for at least the same reasons as claim 1.

The addition of Monroe does not overcome the deficiencies of Miyake. This is because, Miyake does not disclose the selectively blocked feature of claim 1. Monroe discloses the use of, for example, a color image sensor 4 and an image sensor 8 and a switch 18. Switch 18 is used to select the appropriate sensor output. Moreover, the selected sensor output signal 22 is optionally displayed on viewfinder 20. (See Monroe at Col. 6, lines 10-15.) In another

embodiment, the Monroe system includes multiple digital imagers 100, 102 and 104 sharing a common address bus 108 and data bus 106. A camera selection signal 110 is applied to multiplexer 112 to select one of the sensors via lines 114, 116 and 118, to allow for a desired camera. Monroe, however, does not disclose or suggest the selectively blocked feature of claim 1. That is, Monroe does not disclose anything related to synchronization of the first and second image data received by circuitry on any substrate.

Accordingly, it is submitted that claim 15, which includes all of the limitations of claim 1, patentably distinguishes over Miyake in view of Monroe for at least the above-mentioned reasons.

Rejection of Claims 16 and 29 under 35 U.S.C. §103(a)

In the Office Action, at item 11, claims 16 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Miyake in view of Kuroda.

Claim 16 and 29, which include all of the limitations of claim 1 or claim 17, are submitted to patentably distinguish over Miyake for at least the same reasons as those of claim 1 or claim 17.

Claim 1 and 17 include features similar to those of claim 31, and are submitted to patentably distinguish over Kuroda for at least similar reasons to those of claim 31, as discussed above.

Accordingly, claims 16 and 29, which include all of the limitations of claims 1 and claim 17, are submitted to patentably distinguish over Miyake in view of Kuroda for at least the same reasons as those of claim 1 or claim 17.

Rejection of Claim 28 under 35 U.S.C. §103(a)

In the Office Action, at item 12, claim 28 is rejected under 35 U.S.C. §103(a) as being unpatentable over Miyake in view Wells et al. (U.S. Patent Publication No.: 2004/0179600, hereafter referred to as Wells).

Reconsideration is respectfully requested.

Claim 28, which includes all of the limitations of claim 17, is submitted to patentably distinguish over Miyake for at least the same reasons as claim 17.

The addition of Wells does not overcome the deficiencies of Miyake. This is because, Wells does not include the selectively blocked feature of claim 17. Instead, Wells discloses that input circuits may be configured to generate a first intermediate signal from the plurality of input video signals. The storage circuit may be configured to (i) organize the first intermediate signal into a plurality of sequences each related to one of the input video signals and (ii) generate a second intermediate signal from the sequence. (See Wells at paragraph [007].)

More particularly, the input section 102 may multiplex one picture or frame from each of the video signals INPUT 1 - INPUT k into the intermediate signal INT1. (See Wells at paragraph [0020].) That is, Wells discloses the use of multiplexing and not selectively blocking. Moreover, Wells does not discuss the synchronization of portions of first and section captured images.

Accordingly, it submitted that claim 28, which includes all of the limitations of claim 17, patentably distinguishes over Miyake in view of Wells.

Rejection of Claim 37 under 35 U.S.C. §103(a)

In the Office Action, at item 13, claim 37 is rejected under 35 U.S.C. §103(a) as being unpatentable over Kuroda in view of Sasaki (U.S. Patent No.: 7,030,927).

Claim 37 has been canceled without prejudice.

Accordingly, it is submitted that this rejection is now moot.

Rejection of Claim 39 under 35 U.S.C. §103(a)

In the Office Action, at item 14, claim 39 is rejected under 35 U.S.C. §103(a) as being unpatentable over Foote in view of Kayada.

Reconsideration is respectfully requested.

Claim 39, which includes all of the limitations of claim 38, is submitted to patentably distinguish over Foote for at least the same reasons as claim 38.

Claim 38, includes features similar but not identical to those of claim 1, and is submitted to patentably distinguish over Kayada for similar reasons to those of claim 1.

Accordingly, claim 39, which includes all of the limitations of claim 38, is submitted to patentably distinguish over Foote in view of Kayada for at least the same reasons as those of claim 38.

New Claims 40 and 41

New claims 40 and 41 which include all of the limitations of claim 38 and claim 1, respectively, are submitted to patentably distinguish over the cited art for at least the same reasons as their respective independent claims.

Claim 40 includes a patentable distinction beyond that of claim 38, namely: "the synchronizing of the first and second image data streams is based on a portion of the first scene defining a window-of-disinterest," as required by claim 40.

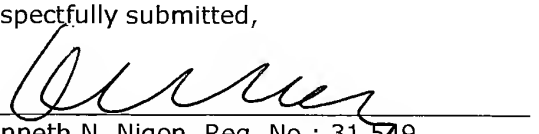
Claim 41 also includes a patentable distinction beyond that of claim 1, namely: "the first and second image modules have a shared, common housing and include first and second imaging arrays, respectively; and the flexible interconnect attaches the shared, common

housing to the substrate and electrically connects the first and second imaging arrays to the circuitry of the substrate," as required by claim 41.

Conclusion

In view of the claim amendments, new claims and remarks, Applicant submits that the application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,



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